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(54) **A combined needle guide, filter, and flow director for gasoline fuel injectors**

(57) A fuel injector (10), including a housing (12), an armature assembly (14), an injector needle (16), a needle seat (18), a needle guide (20), and a orifice disc (22) containing one or more orifice metering pathways (24). The needle guide (20) contains a center guide bore (26) and a plurality of filtering passageways (28). The plurality of filtering passageways (28) are used to filter fuel passing through the needle guide (20) and induce swirl in the fuel to improve atomization.

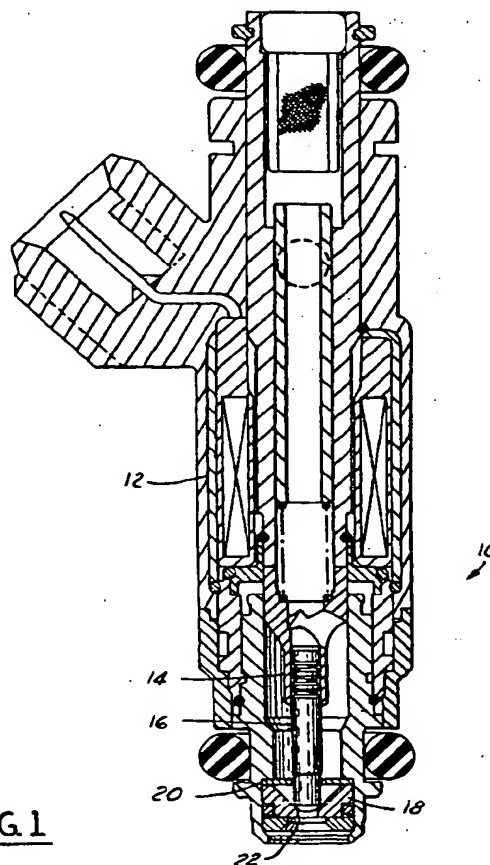


FIG. 1



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Place of search MUNICH		Date of completion of the search 4 November 2003	Examiner JACKSON, S
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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